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# California stock, north of Point Conception
#
# SS2 Version 2.00g (July 2007)
# BASE catch stream
# M females = 0.10, M males = 0.12
# steepness = 0.58 based on Dorm recommendation
# RecFIN CPUE index split: post-2000 q as separate fishery
#
#
1 # Morphs - growth patterns - not gender
1 # Sub-Morphs
1 # Areas
1 1 1 1 1 1 1 # Areas per Type
1      # Recruitment Distribution Pattern
0      # Do not allow for Seasonal Recruitment Interaction
0      # Do not allow for Migration
0 0 0 # No movement patterns - must have a line of 3 numbers here
0      # Blocks
0.5    # Recruit Fraction Female
1000   # Sub-Morph Ratio Between/Within
-1     # Sub-Morph Distribution - set equal to -1 for normal approximation
#
# Natural Mortality & Maturity
1      # last age for constant young
2      # first age for constant old
2      # reference age for first size-at-age parameter
25     # reference age for second size-at-age parameter
0
1      # CV=f(A)
1      # maturity option - length logistic
3      # first mature age - (Laidig et al)
1      # MG parm as offset - direct assignment
1      # MG parm adjustment - log transform
-1
#
# mortality & growth_parms
# LO    HI    INIT    PRIOR   PR_type SD    PHASE env-var use dev dev minyr dev maxyr dev stddev Block Block_Fxn
0.001  0.4   0.1    0.006   0     0.8   -1    0 0 0 0 0.5 0 0 # female natural mortality young
0.0    0.2   0.1    0.1     0     0.8   -1    0 0 0 0 0.5 0 0 # female natural mortality old (offset)
10    25    17.9   17.9    0     0.8   -1    0 0 0 0 0.5 0 0 # female length at Amin
26    45    37.5   37.5    0     0.8   1     0 0 0 0 0.5 0 0 # female length at Amax
0.01   0.3   0.147  0.088   0     0.8   1     0 0 0 0 0.5 0 0 # female k, von Bertalanffy growth coef.
0.001  0.2   0.085  0.105   0     0.8   -2    0 0 0 0 0.5 0 0 # female CV young
0.001  0.2   0.095  0.105   0     0.8   -2    0 0 0 0 0.5 0 0 # female CV old (exp. offset)
-3    3     0.12   0.006   0     0.8   -1    0 0 0 0 0.5 0 0 # male natural mortality young
0.00   0.2   0.12   0.1     0     0.8   -1    0 0 0 0 0.5 0 0 # male natural mortality old (offset)
7     20    15.7   15.7    0     0.8   -1    0 0 0 0 0.5 0 0 # male length at Amin
21    40    31.2   31.2    0     0.8   1     0 0 0 0 0.5 0 0 # male length at Amax
0.01   0.4   0.295  0.295   0     0.8   1     0 0 0 0 0.5 0 0 # male k, von Bertalanffy growth coef.
0.07   0.23  0.085  0.111   0     0.8   -2    0 0 0 0 0.5 0 0 # male CV young
0.07   0.23  0.11   0.111   0     0.8   -2    0 0 0 0 0.5 0 0 # male CV old (exp. offset)
#
#_wt-len, maturity, and [eggs/kg]=a+b*weight
3.4e-5 3.4e-5 3.4e-5 3.4e-5 0     0.8   -1    0 0 0 0 0.5 0 0 # female - coef. to convert L in cm to Wt in kg (Lea et al 1999)
1     3     2.87   2.87   0     0.8   -1    0 0 0 0 0.5 0 0 # female - exp. in female L to W conversion (Lea et al 1999)
22    32    26     26     0     0.8   -1    0 0 0 0 0.5 0 0 # maturity logistic inflection (Wyllie 1987)
-0.7   -0.5  -0.6   -0.6   0     0.8   -1    0 0 0 0 0.5 0 0 # maturity logistic slope (negative values) (Wyllie 1987)
0     2     62585  62585  0     0.8   -1    0 0 0 0 0.5 0 0 # alpha (intercept) = 1
-1    1     211841 211841 0     0.8   -1    0 0 0 0 0.5 0 0 # beta (slope) = 0 -- these alpha and beta values causes fecundity to = SB
2.9e-5 2.9e-5 2.9e-5 2.9e-5 0     0.8   -1    0 0 0 0 0.5 0 0 # male - coef. to convert L in cm to Wt in kg (Lea et al 1999)
1     3     2.89   2.89   0     0.8   -1    0 0 0 0 0.5 0 0 # male - exp. in female L to W conversion (Lea et al 1999)
#
# recruitment apportionment
-4    4     0     0     -1    99   -3    0 0 0 0 0.5 0 0 # _recrdristribution_by_growth_pattern
-4    4     0     0     -1    99   -3    0 0 0 0 0.5 0 0 # _recrdristribution_by_area 1
-4    4     4     0     -1    99   -3    0 0 0 0 0.5 0 0 # _recrdristribution_by_season 1
1     1     1     1     -1    99   -3    0 0 0 0 0.5 0 0 # _cohort_growth_deviation
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0 # Environmental Custom Flag
0 # TimeBlock Custom Flag
#
#_Spawner-Recruitment
1      # SR Function (1=BH w flat-top beyond Bzero, 2=Ricker, 3=standard BH)
#_LO   HI     INIT    PRIOR   PR_type SD      PHASE
5     12     8.3     10      1     10      1      # virgin recruitment
0.2   1.0     0.58    0.58    1     0.181   -1      # steepness
0.1   1       0.5     1       1     1       -1      # sigma-r
-5    5       0       0       0     1       -3      # env-link
-5    5       0       0       0     1       -4      # offset for initial equilibrium
0     0.5     0       0       -1    99      -2      # reserve for future autocorrelation
#
0     #_SR_env_link
1     #_SR_env_target_1=devs; _2=R0; _3=steepness
1     #do_recr_dev:  0=none; 1=devvector; 2=simple deviations
#
#first_yr  last_yr  min_log_res  max_log_res  phase
1960    2006      -2          2          3          #_recr_devs
1492    #_first_yr_fullbias_adj_in_MP
#
#_initial_F_parms for each fishery
#_LO   HI     INIT    PRIOR   PR_type SD      PHASE
0     0.1     0.00    0.01    0     1       -2
0     0.1     0.00    0.01    0     1       -2
0     0.8     0.00    0.1     0     1       -2
#
#_Q_setup
# A=do power, B=env-var, C=extra SD, D=devtype(<0=mirror, 0/1=none, 2=cons, 3=rand, 4=randwalk),
# E=0=num/1=bio, F=err_type
#_A   B   C   D   E   F
0 0 0 0 1 0
0 0 0 0 1 0
0 0 0 0 1 0
0 0 0 0 0 0 #this makes q analytical for cpfv survey; no difference in fit relative to freely estimating q
1 0 0 0 1 0
1 0 0 0 1 0
0 0 0 0 1 0
0 0 0 0 0 0 #POST2000 RECFIN
#
#_Q_parms(if_any)
#_LO   HI     INIT    PRIOR   PR_type SD      PHASE
-10   20     0       0       0     10      -3      # juv surveyl power
-10   20     0       0       0     10      -3      # juv surveyl power
#-50   50     -9     -7     0     10      2      # catchability for CPFV index
#
# Selectivity and Retention
#_size_selex_types
#_Pattern Discard Male Special
1 0 1 0 # 1-recreational
1 0 1 0 # 2-commercial hkl
1 0 1 0 # 3-commercial net
1 0 1 0 # 4-CPFV survey
0 0 0 0 # 5-juv survey
0 0 0 0 # 6-dive juv survey
5 0 0 1 # 7-ghost fishery
5 0 0 1 # 8-POST2000RECFIN
#
#_age_selex_types
#_Pattern Discard Male Special
10 0 0 0 # 1-recreational
10 0 0 0 # 2-commercial hkl
10 0 0 0 # 3-commercial net
10 0 0 0 # 4-CPFV survey
11 0 0 0 # 5-juv survey
10 0 0 0 # 6-dive juv survey
10 0 0 0 # 7-ghost fishery
10 0 0 0 # 8-POST2000RECFIN
#
#_selex_parms
#_LO   HI     INIT    PRIOR   PR_type SD      PHASE env-var use_dev dev_minyr dev_maxyr dev_stddev Block Block_Fxn
#_size_sel: 1 - recfin

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15      50      24.32    28      0      0.5      2      0 0 0 0 0.5 0 0 # 50%
1      15      6.75     6      0      0.5      2      0 0 0 0 0.5 0 0 # diff. in size b/t 50 & 95%
#
# size_sel: 1 - male offsets- 4 lines
1      60      24      20      0      10      -2      0 0 0 0 0.5 0 0 #size@dogleg
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at minL
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at dogleg
-10     0      -0.33     2      0      10      -2      0 0 0 0 0.5 0 0 #log(relmalesel)at maxL
#_size_sel: 2 - comm hkl
15      40      31.57    30      0      0.5      2      0 0 0 0 0.5 0 0
1      15      8.36     8      0      0.5      2      0 0 0 0 0.5 0 0
#
# size_sel: 2 - male offsets- 4 lines
1      60      24      20      0      10      -4      0 0 0 0 0.5 0 0 #size@dogleg
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at minL
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at dogleg
-10     10      -0.33     2      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at maxL
# size_sel: 3 - comm net
15      40      38.80    37      0      0.5      2      0 0 0 0 0.5 0 0
1      15      3.57     4      0      0.5      2      0 0 0 0 0.5 0 0
#
# size_sel: 3 - male offsets- 4 lines
1      60      24      20      0      10      -4      0 0 0 0 0.5 0 0 #size@dogleg
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at minL
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at dogleg
-10     10      -0.33     2      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at maxL
#
# size_sel: 4 - rec survey
15      40      22.27    37      0      0.5      2      0 0 0 0 0.5 0 0
1      15      3.749    4      0      0.5      2      0 0 0 0 0.5 0 0
#
# size_sel: 4 - male offsets- 4 lines
1      60      24      20      0      10      -4      0 0 0 0 0.5 0 0 #size@dogleg
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at minL
-10     10      0       0      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at dogleg
-10     10      -0.33     2      0      10      -4      0 0 0 0 0.5 0 0 #log(relmalesel)at maxL
#
# length mirror CPFV for rec
-2      0      -1      1      0      0.5      2      0 0 0 0 0.5 0 0
-2      0      -1      31     0      0.5      2      0 0 0 0 0.5 0 0
#
# length mirror POST2000 for rec
-2      0      -1      1      0      0.5      2      0 0 0 0 0.5 0 0
-2      0      -1      31     0      0.5      2      0 0 0 0 0.5 0 0
# Age-based for juv survey (sel. age 0s only)
#_age_sel: 5 - juv survey 1
0 0 0 0 10 -3 0 0 0 0 0 0 0 0 #
0 0 0 0 10 -3 0 0 0 0 0 0 0 0 #
#
#_age_sel: 6 - juv survey 2 - Laidig, did not use
#0 0 0 0 10 -3 0 0 0 0 0 0 0 #
#0 0 0 0 10 -3 0 0 0 0 0 0 0 #
#
1      #_env/block/dev_adjust_method(1/2)
0      #_env setup
0      #_block setup
-1     #_selparmdev-phase
#
#_Variance_adjustments_to_input_values
#_1 2 3 4 5 6 7
-0.025699 0 0 0.129625 0 0 0 0 #_add_to_survey_CV
0 0 0 0 0 0 0 #_add_to_discard_CV
0 0 0 0 0 0 0 #_add_to_bodywt_CV
1.7393 3.15333 1 3.19761 1 1 1 1 #_mult_by_lencomp_N
2.81663 1 1 1 1 1 1 #_mult_by_agecomp_N
1 1 1 1 1 1 1 #_mult_by_size-at-age_N
#
30     #_DF_for_discard_like
30     #_DF_for_meanbodywt_like
#
1      #_maxlambdaphase
0      #_sd_offset

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#
#_lambdas_(columns_for_phases)
1   # rec fishery - cpue index
0   # comm hkl fishery
0   # comm net fishery
1   # CPFV survey - cpue index
1   # coast juv survey - prerecruit index
0   # Miller Geibel survey
0   # ghost fisherY
1   # POST2000 - RecFIN cpue index
0   # discard:_1
0   # discard:_2
0   # discard:_3
0   # discard:_4
0   # discard:_5
0   # discard:_6
0   # ghost
0   # POST2000
0   # meanbodyweight
1   #_lencomp:_1
1   #_lencomp:_2
1   #_lencomp:_3
1   #_lencomp:_4
0   #_lencomp:_5
0   # length6
0   # ghost
0   # POST2000 (comps left in 1)
1   #_agecomp:_1
0   #_agecomp:_2
0   #_agecomp:_3
0   #_agecomp:_4
0   #_agecomp5
0   # age6
0   # age ghost
0   # POST2000
0   #_size-age:_1
0   #_size-age:_2
0   #_size-age:_3
0   #_size-age:_4
0   #_size-age5
0   # sizeage6
0   # size age ghost
0   # POST2000
0   #_init_equ_catch
1   #_recruitments
0   #_parameter-priors
0   #_parameter-dev-vectors
1000 #_crashPenLambda
0.9  #_maximum allowed harvest rate
999

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